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CENTRAL INTELLIGENCE AGENCY

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NONFERROUS METALS INDUSTRY REPORTS 1949 GAINS

/Numbers in parentheses refer to appended sources./

In late 1949 and early 1950, the nonferrous metals industry reported a general rise in production and the adoption of many new and improved techniques in production. In the Armenian copper industry, the Zangezur Mine Administration in Kafan fulfilled the 1949 plan for ore output by the end of December and throughout the year mined 24 percent more ore than in 1948.(1)

In accordance with the Moscow drive for more effective utilization of the resources of enterprises, the Mine Administration is making further efforts to improve operations.(2) The improvements over the past 2 years have been substantial. They include the building of the main tunnel, introduction of new electric mine locomotives, and mechanization of basic production processes. These measures have helped to increase transport of ore by several hundred percent during those years and to provide continuous operation of the flotation factory. The factory is now producing twice as much concentrate. Over the past 4 years, gross-production output has doubled as compared with February 1946, labor productivity has increased 42 percent, and wages paid to workers have increased 50 percent.(3)

As for the current improvements, in Mine No 5-6 all mining operations will be concentrated on one level, increasing labor productivity 20 percent. The old narrow-gauge lines and cars in the main tunnel will be replaced with new equipment.

By modernizing the electrical equipment at the flotation factory, running speed of machinery will be increased 15 percent. Mechanization of the supply of concentrating oils will result in a 1-1½ percent increase in the recovery of copper and a saving of 7.8 percent in electric power.

The machine shop will release 120 square meters of production area by decreasing the area occupied by each machine tool which produces spare parts

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for pneumatic hammers and by combining the repair division with the division producing spare parts. Labor distribution will be reorganized in order to increase the operation of the machine tools from 16 to 24 hours a day.

Combining the repair shop with the capital construction shop will release 220 square meters of production area and will also reduce transport expenses. The achievement of all these measures will make possible a production increase of 8 percent above plan and an increase of 17.5 percent in the productivity of the flotation factory.(2)

Another Armenian copper enterprise has made substantial improvements. The Shamlug Mine Administration has expanded the working front and opened new faces. In order to insure continuous operations, workshops for light repair of mine equipment have been set up directly in the mine sections. Transport facilities have been considerably improved. The mine has obtained new large-capacity cars which should double loading speed. One and a half kilometers of electric car track have been replaced in the main tunnel and all lines have been put in good order. Mechanization of labor-consuming processes has helped to increase the productivity of miners and drillers by 6 percent, and the cost of one ton of ore has decreased by 1.7 percent more than planned. In comparison with 1948, the production cycle has been shortened by 11 days and 667,000 rubles have been saved between January and December 1949 by mechanization, efficient expenditure of materials, and better care of equipment.(4) The mines were 3 days ahead of schedule in completing the January mining plan.(5)

The Alaverdi Copper-Smelting Plant, also in Armenia, completed the 1949 gross-production plan on 11 November (6) and by 21 December had fulfilled the 1949 plan 110 percent.(7)

In the Kazakhstan copper industry, the Balkhask Copper-Smelting Plant, Karaganda Oblast, completed the 1949 plan for smelting blister copper on 26 December.(8) A campaign for heavy high-speed melts has been initiated in the plant. The leader of the campaign has pledged to increase the melt 0.6 ton above the norm for each square meter of furnace hearth and to reduce fuel consumption and the loss of copper in residue slags.(9) In January, the plant's metallurgical shop achieved a high production level. The January plan for smelting blister copper was completed ahead of schedule.

The Vostochno-Kounrad Mine in the same oblast completed the January mining plan on schedule.(10) The Kounrad Mines are working to increase ore output 11 percent in 1950 over 1949.(11) The Dzhezkazgan miners have exceeded the January plan (10), having attained the 1950 mining level in December.(12) The Karsakpay Copper-Smelting Plant exceeded the augmented January production plan on schedule and achieved the highest level of blister-copper smelting of its career. In January, the plant produced as much copper as it had during the entire first quarter of 1949. These achievements were the result for the most part of excellent preparations for difficult winter conditions. In January too, the plant produced only first-grade metal. The metallurgical shop has adopted a number of measures for modernizing production processes. The Irtysh Copper Smelting Plant, Vostochno-Kazakhstan Oblast, also exceeded the January smelting plan.(13)

In 1949, the Moscow Copper-Smelting Plant imeni Molotov produced 11 percent more blister and electrolytic copper than in 1948.(14)

The major USSR manganese enterprises have pledged substantial production increases for 1950. On 19 December, the Georgian "Chiaturmarganets" Trust completed the 1949 plan for mining manganese. The year 1950 will see a significant increase in the output of manganese and the trust is now undertaking

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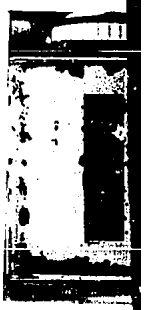


many preparations to ensure this increase. Particular attention is being given to the introduction of new technology in concentrating manganese in an effort to reduce the metal loss to the minimum and to improve its quality. In order to do this, it has been planned to install newly designed machinery in the concentration plants and to improve concentration processes, for which large sums will be spent. High-frequer · jigging machinery and magnetic separators, in particular, will be installed.

In order to meet the 1950 plan, all mine administrations in the trust are making efforts to open up new and expand existing work fronts. In the first quarter 1950, reconstruction of the underground transport system in the Mine imeni Lenin will be completed. The mine will have, for the first time in the Chiatura Basin, new 3-ton cars and heavy-duty electric locomotives. Three new compressors will be installed in the mines imeni Lenin and Stalin and the degree of mechanization in loading the ore will be doubled. To improve operating control, all production will be put on a complete dispatcher basis.

New housing and community construction projects will plan an important part in 1950 operations. It is also planned to start construction of a combine at the Mine imeni Lenin, the administration building of the trust, a passenger cableway between Chiatura and Perevisi, and also highway improvement in Chiatura is planned. In 1950, considerably larger sums, including 5½ million rubles for housing construction, will be spent on the technical reorganization of production and capital construction than were spent in 1949.(15)

The trust's Mine imeni Stalin (director, L. Goshkhoteliani) in the third quarter 1949 increased mining of manganese 44.1 percent over the third quarter 1948. The mine completed the 1949 plan on 15 December. Three concentration plants handle the ore put out by the mine and these are supervised by engineers A. Gabechav, I. Tadumadze, and P. Gvelesiani. All processes except loading are : echanized. Pneumatic drills are used in the faces and hoists and electric locomotives are used for hauling the ore. Electric drills are used for drilling blast holes. Loading is done partially by scraper conveyers.(16)

The Nikopol'-Marganets Manganese Basin in Dnepropetrovsk Oblast completed the 1949 plan on 28 December (17) and its workers have pledged to increase the mining of manganese by 30 percent during 1950.(18)

New mining methods are being adopted of necessity in the basin. The manganese ores lie in blanket deposits with a capacity of from 1.8 to 2.2 meters. Mining conditions are extremely difficult because of the extremely high water content of the rock, the tremendous mine pressure, and the low stability of the workings. For these reasons, the inadequate system of working the mine by approaches (zakhodka) is used widely throughout the basin. The ore block is prepared for exploitation by driving panel haulage drifts off which mining drifts are driven every 15-20 meters. The pillars left by the cutting of the drifts are mined by single or double approaches 2½-3 or 5 meters wide respectively. The face is advanced from each mining drift by half the width of the pillar. The ore is extracted by pneumatic drill, then loaded by shovels into half-ton cars which are pulled by hand to the haulage drift. There, the ore-filled cars are removed by continuous cable to the stockyard. All development workings are strengthened by complete door sets. Incomplete door sets are installed in the approaches where the ore is removed in 2-3 days. The brigade working in one approach usually consists of four men -- the miner, car handler, and two loaders. The brigade mines as much as 40 tons per shift.

The nature of the deposit and this inadequate system of working it lead to a scattering of mining points and to a low volume of hauling. The properties of the Nikopol' ore (dampness and adhesiveness) make mechanization of underground transport difficult. The lack of mechanization in turn results in a large waste of manpower, considerable lowering of productivity, and reduction in the speed of advancing the faces. This last is harmful to the condition of the faces and workings, necessitates excess expenditure of manpower for timbering, and, in a number of cases, leads to losses of ore as a result of the impossibility of hauling the cars through extremely narrow mining drifts. For these reasons, the problem of mechanizing underground transport, particularly in the working faces and mining drifts, is of extreme importance.

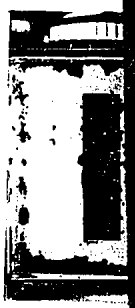
Utilization of the usual series band and scraper conveyers, used in the coal industry, is not suitable to the Nikopol' basin since this type of conveyer is heavy, cumbersome, and its productivity is in excess of that needed in the Nikopol' mines. Specially designed conveyers are needed.

The Chair of Mine Transport of the Dnepropetrovsk Mining Institute has developed a new type of scraper conveyer, the DGI, for hauling the wet and sticky ores of the Nikopol' Basin. A number of structural deficiencies of the ST-2-6, STS-3, and ST-6 scraper conveyers have been corrected, and the size and weight have been considerably reduced, the difficulty in reassembling has been diminished, and the use of either electric or pneumatic drive is provided. The DGI and the DGI-2, which is even lighter, began to be used in the basin for transporting the less sticky ore in 1947 - 1948.

The DGI conveyer is used in mining the approach. A band conveyer, installed in the drift, has a flat rubberized band up to 120 meters in length which can be shortened as the old approach is filled in and as work is begun in the new one. The brigade serving one approach consists of four or five men, including a miner, loader, who also does timbering, an electrician, and two men for loading ore into cars in the haulage drift (one of these is the operator for the conveyers which are operated by remote control by signals from the face). Primary installation of the conveyer in the approach and removal of it when extraction of ore has been completed is done by a 4-man brigade in 1½-2 hours. These same brigades also shorten the band conveyer in the drift, an operation which takes 4-6 hours.

The conversion to mechanized loading of ore has helped to increase the average monthly output of a face by 40-50 percent as compared with hand loading, and also to increase the productivity of the worker at the face as high as 40 percent and of the worker in the mining section as high as 25 percent. The DGI scraper conveyer, as it is now, is not able to be operated in extremely sticky ores. The DGI is excellently adapted not only to manganese ore mining, but to mining of other minerals such as the iron ore in the Tula and Lipetsk deposits, Ukranian lignite coal, and in all conditions which require compact, quickly maneuverable, light-duty conveyers.(19)

There has also been a change in mining methods in the Mazul'skoye Manganese Deposit, Krasnoyarsk Kray. This deposit consists of a number of isolated ore bodies, the largest of which coincide with zones of crumbling rock, occurring for the most part in association with limestone formations. Until 1948, the deposit was worked mainly by the open-pit method. In the second half of 1948, because of the reduction in the extent of open-pit operations, almost 52 percent of the total output was mined by sublevel caving with shallow blast holes, a system made difficult by the instability of the ore and the crumbling tendency of the rock. The productivity of labor per worker in underground operations was only 83 percent of the average productivity of the mining division, and the cost delivered to the warehouse was 111.8 percent of the average.



Beginning in January 1949, it was planned to make a complete changeover from open-pit mining to underground. It was estimated at the time that the productivity of the subsurface workers would decrease 16.5 percent as compared with 1948 and the cost would increase 11.8 percent. These estimates made it necessary for the directors of the Mine Administration to discover new and more productive methods of working the deposit. In the fourth quarter 1948, tests were made of mining by deep-blast holes, and the results were so favorable in increasing labor productivity and decreasing costs that the mine was scheduled to use deep-blast-hole mining in 65 percent of all mining operations.

In 9 months of 1949, the use of deep-blast holes in mining resulted in considerable cost reductions and increase in labor productivity, particularly in the second and third quarters when this method was used in nearly 80 percent of all mining operations. Productivity of the driller in the first quarter was 125 percent of that of the second half of 1948, in the second quarter 144 percent, and in the third quarter 192 percent of the second half of 1948. The volume of cutting operations per ton of ore in the first quarter was 99 percent of that of the second half of 1948 and only 42 percent in the second and third quarters. Consumption of blasting agents per ton of extracted material in the first quarter 1949 was only 83 percent of the second half of 1948, 79 percent in the second quarter and 76 percent in the third quarter. Consumption of support timber in the three quarters was 70, 75, and 48 percent respectively of the second half of 1948. The cost of one ton of ore delivered to the warehouse in the three quarters was 94, 85, and 83 percent respectively of the costs in the second half of 1948. The use of this system also enabled the mine to convert its operations from three shifts to one shift without reducing the volume of mining.

To sum up, mining by deep-blast holes considerably expanded the limits on using such highly productive methods as the shrinkage system and the system of open rooms, even in mining these sufficiently unstable ores. The safety of the driller was made more secure, since drilling is conducted in large and well-equipped rooms. Savings amount to 50 percent per ton of mined material as a result of the decrease in sinking operations. The method also increased the productivity of the underground workers by concentrating mining operations in individual blocks, making easier supervision of work and full utilization of manpower.(20)

In zinc and lead mining and processing, the Ust'-Kamenogorsk Zinc Plant, Vostochno-Kazakhstan Oblast, upped its zinc output in 1949 to 182 percent of the 1948 output, and produced only the highest grade zinc. The plant completed its 1949 plan ahead of schedule. Recovery of metal exceeded the plan by 3 percent and its cost has been decreased 3 percent more than planned. Labor productivity is 15 percent above the plan. In 11 months, the plant saved 7 million kilowatt-hours of electric power and realized 15 million rubles' profits.(21)

The past 4 years have seen great changes at the Tekeli Lead and Zinc Combine, Taldy-Kurgan Oblast in Kazakhstan, including improvement in methods of mining and increased use of machinery. Productivity of labor during this period increased 300 percent.(22)

The Chimkent Lead Plant, Yuzhno-Kazakhstan Oblast, is taking measures to increase production. Reconstruction of smelting furnaces has begun and will result in a considerable production rise when completed. Expansion of the present molding area will increase the output of iron castings by 23 tons per month. Measures are also being taken to speed car turnover time in intraplant transport.(23)

In October, the Donskiye Chromite Mines, Aktyubinsk Oblast, Kazakh SSR, completed the 1949 mining plan and in November, attained the 1950 production level. The mines are now exceeding daily plans by 20-30 percent.(24)

In previous years in the winter months, the Aktyubinsk Ferroalloy Plant has decreased metal output. This winter, under difficult conditions, the metallurgical and auxiliary shops, the TETs, and all production sections are operating at full capacity. The TETs exceeded its January plan for electric power production and saved more than 300 tons of coal.

The "Ubaredmet" (rare metals) Mine, Kazakh SSR, has been exceeding its plans from month to month. A new method of drilling, arising from one of the engineer's changes in the drill, has increased ore output. The machine shop is introducing new methods in reconditioning truck parts.(26)

In the Kirgiz SSR mining and metallurgical industry, labor productivity in 1949 increased 16.2 percent over 1948. The Khaydarken Combine, Osh Oblast, has fulfilled the Five-Year Plan for volume of production.(27) The Mining and Metallurgical Combine imeni Frunze (director, Drozdov) completed the 1949 plan on 24 December. The plan for output of higher grades of metal was exceeded 17 percent. The combine has also exceeded the production level planned for 1950.(28)

The "Krasnyy vyborzhets" Plant in Leningrad is making tests of an innovation which combines two smelting furnaces into one apparatus. The result is a more effective utilization of the heat of waste gases and a considerable saving in fuel. Four years ago, restoration of the production of rolled copper strips was a notable achievement, whereas at present, the plant has completely mastered production of plates, bars, and forgings from the complex alloy, chromo-zinc bronze.(29) Another innovation at the plant developed by the workers and scientific associates of the Polytechnical Institute is a process of rolling on a wide six-roll mill. Wooden bearings instead of bronze have been adopted and water instead of oil is used for lubrication, with the resultant savings in metal and lubricating oil. Under the direction of Chief Metallurgist Shabashev, foundry workers have started casting large ingots in horizontal water-cooled molds, a process which has resulted in substantial improvement in the surface of the ingots and a large saving in copper.(30)

Another Leningrad innovation in the nonferrous metallurgy field is a new type of furnace for smelting nonferrous metals designed by V. I. Petrov, Candidate in Technical Sciences and docent at the Leningrad Planning Institute. The furnace -- the VIP vertical induction furnace -- can smelt 250 kilograms per hour and in one melt can produce up to 1,000 kilograms of alloy. The VIP is designed to provide 100-percent resmelting of metal wastes (cuttings). The furnace is distinguished from existing models by its simpler design and its considerably greater capacity. In September, one of these furnaces, built in a short time by plant workers, was put into operation at the iron-casting plant of the Latvian Railroad System and has already produced its first bronze melt there.(31) The furnace has also been installed in the Vitebsk Marshalling Station in Leningrad.(32)

The Leningrad "Sevkabel'" Plant has made improvements in facilities. Its rolling mill formerly had a very low productivity because of the larger number of hand operations. In 1949, the mill was modernized with the aid of Leningrad scientists, and now operates like new. The roller conveyers, tilters, elevating tables, thrust mechanism, and the high-speed conveyers now convert copper ingots into wire almost without any hand operations.(33)

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On 2 January, the Moscow Metal-Rolling Plant of the Ministry of the Metallurgical Industry installed a new strip-rolling mill in the second shop in the area formerly occupied by two abandoned soaking pits. The mill will go into operation at the end of January and will enable the plant to produce 150,000 more rubles' worth of production. The fourth shop produces aluminum sheet thousandths of a millimeter in width. A new division in the shop was put into service on 2 January in the area formerly occupied by the department of technical control. Two new rolling mills and guillotine shears have been assembled in the area which will be used for rolling foil.(34)

In 11 months of 1949, the Moscow Nonferrous Metal Processing Plant produced 1,000 more tons of aluminum than during the whole of 1948. Among its shops is the shop producing pistons.(14)

The Moscow Aluminum Scrap Plant took first place in the competition among related enterprises of the Ministry of the Metallurgical Industry in the fourth quarter 1949. The aluminum shop has completed its Five Year Plan, has decreased the metal content in residue slags by one-half, and increased the production of metal per square meter of furnace hearth by more than one-half ton. The bronze-casting shop topped the January production plan by 125 tons of metal.(35)

SOURCES

1. Kommunist, No 307, 31 Dec 49
2. Kommunist, No 303, 25 Dec 49
3. Kommunist, No 42, 18 Feb 50
4. Kommunist, No 294, 15 Dec 49
5. Kommunist, No 35, 9 Feb 50
6. Kommunist, No 282, 1 Dec 49
7. Kommunist, No 299, 21 Dec 49
8. Kazakhstanskaya Pravda, No 255, 31 Dec 49
9. Kazakhstanskaya Pravda, No 221, 11 Nov 49
10. Kazakhstanskaya Pravda, No 24, 1 Feb 50
11. Kazakhstanskaya Pravda, No 10, 14 Jan 50
12. Kazakhstanskaya Pravda, No 240, 10 Dec 50
13. Kazakhstanskaya Pravda, No 26, 4 Feb 50
14. Vechernyaya Moskva, No 302, 23 Dec 49
15. Zarya Vostoka, No 255, 31 Dec 49
16. Zarya Vostoka, No 247, 18 Dec 49
17. Pravda Ukrainy, No 308, 31 Dec 49

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18. Moskovskiy Bol'shevik, No 4, 5 Jan 50
19. Gornyy Zhurnal, No 11, Nov 49
20. Gornyy Zhurnal, No 2, Feb 50
21. Vechernyaya Moskva, No 298, 19 Dec 49
22. Kazakhstanskaya Pravda, No 33, 12 Feb 50
23. Kazakhstanskaya Pravda, No 227, 20 Nov 49
24. Krasnyy Flot, No 290, 9 Dec 49
25. Kazakhstanskaya Pravda, No 26, 5 Feb 50
26. Kazakhstanskaya Pravda, No 228, 22 Nov 49
27. Sovetskaya Kirgiziya, No 23, 1 Feb 50
28. Sovetskaya Kirgiziya, No 1, 1 Jan 50
29. Pravda, No 32, 1 Feb 50
30. Leningradskaya Pravda, No 228, 27 Sep 49
31. Sovetskaya Latviya, No 225, 23 Sep 49
32. Moskovskiy Komsomolets, No 115, 20 Sep 49
33. Izvestiya, No 5, 6 Jan 50
34. Vechernyaya Moskva, No 1, 2 Jan 50
35. Vechernyaya Moskva, No 40, 16 Feb 50

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